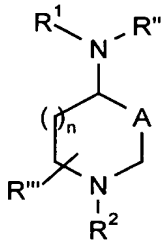
ABSTRACT OF THE DISCLOSURE

INHIBITORS OF CYSTEINE PROTEASE

This invention relates to compounds of formula (I):

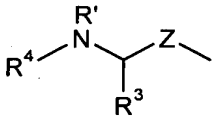


(I)

wherein:

A is C(O) or CH(OH);

R^1 is



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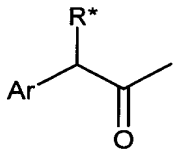

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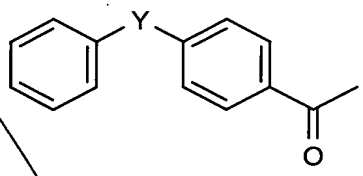

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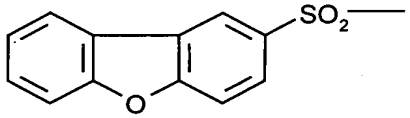
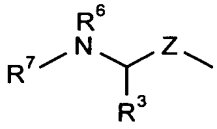


;

R^2 is H, C_{1-6}alkyl, C_{3-6}cycloalkyl-C_{0-6}alkyl, Ar-C_{0-6}alkyl, Het-C_{0-6}alkyl, $R^5C(O)$-, $R^5C(S)$-, R^5SO_2-, $R^5OC(O)$-, $R^5R'NC(O)$-, $R^5R'NC(S)$-, adamantyl-C(O)-, or



;

R" is H, C_{1-6}alkyl, Ar-C_{0-6}alkyl, or Het-C_{0-6}alkyl;

R"' is H, C_{1-6}alkyl, C_{3-6}cycloalkyl-C_{0-6}alkyl, Ar-C_{0-6}alkyl, or Het-C_{0-6}alkyl;

each R^3 independently is H, C_{2-6}alkenyl, C_{2-6}alkynyl, Het, Ar or C_{1-6}alkyl optionally substituted by OR', SR', NR'_2, $R'NC(O)OR^5$, CO_2R', $CO_2NR'_2$, $N(C=NH)NH_2$, Het or Ar;

R^4 is H, C_{1-6}alkyl, C_{3-6}cycloalkyl-C_{0-6}alkyl, Ar-C_{0-6}alkyl, Het-C_{0-6}alkyl, $R^5C(O)$-, $R^5C(S)$-, R^5SO_2-, $R^5OC(O)$-, $R^5R'NC(O)$-, $R^5R'NC(S)$-, R'HNCH(R')C(O)-, or $R^5OC(O)NR'CH(R')C(O)$-;

each R^5 independently is C_{3-6}cycloalkyl-C_{0-6}alkyl, Ar-C_{0-6}alkyl, Het-C_{0-6}alkyl, Ar-C_{0-6}alkoxy, Het-C_{0-6}alkoxy, or C_{1-6}alkyl optionally substituted by OR', SR', NR'_2, $R'NC(O)OR^5$, CO_2R', $CO_2NR'_2$, $N(C=NH)NH_2$, Het or Ar;

R^6 is H, C_{1-6}alkyl, Ar-C_{0-6}alkyl, or Het-C_{0-6}alkyl and R^7 is H, C_{1-6}alkyl, C_{3-6}cycloalkyl-C_{0-6}alkyl, Ar-C_{0-6}alkyl, Het-C_{0-6}alkyl, $R^5C(O)$-, $R^5C(S)$-, R^5SO_2-, $R^5OC(O)$-, $R^5R'NC(O)$-, $R^5R'NC(S)$-, R'HNCH(R')C(O)-, or $R^5OC(O)NR'CH(R')C(O)$-; or R^6 and R^7 are connected to form a pyrrolidine, a piperidine, or a morpholine ring;

each R' independently is H, C_{1-6}alkyl, Ar-C_{0-6}alkyl, or Het-C_{0-6}alkyl;

R* is H, C_{1-6}alkyl, C_{3-6}cycloalkyl-C_{0-6}alkyl, Ar-C_{0-6}alkyl, or Het-C_{0-6}alkyl;

Y is a single bond or O;

each Z independently is CO or CH_2; and

n is 0, 1, or 2;

or a pharmaceutically acceptable salt thereof, which are inhibitors of cysteine proteases, particularly cathepsin K, and are useful in the treatment of diseases in which inhibition of bone loss is a factor.